[illegible]

[illegible]

[illegible], Aleksey [illegible] Sergeyevich;
DEDKOV, Boris Petrovich; [illegible],L.Ye., red.; PEVZNER,[illegible]

[The city of Syzran'; [illegible]
[illegible] Syzran']; [illegible]
Kuybyshevskoe [illegible]

AMINEV, Aleksandr Mikhaylovich, zasl. deyatel' nauki RSFSR, prof.;
PETROPOL'SKAYA, [illegible].Ye., red.; GOL'DSHTEYN, L.Ye., red.

[Manual on proctology] Rukovodstvo po proktologii. Kuibyshev,
Kuibyshevskoe knizhnoe izd-vo. Vol.1. 1965. 517 p.
(MIRA 18:9)

GOL'DSHTEYN, [illegible]

Cellulose-decomposing fungi in the soils of southwestern Kyzyl Kum. Uzb. biol. zhur. 9 no.5:49-52 '65. (MIRA 18:10)

1. Institut botaniki AN UzSSR.

GOL'DSHTEYN, M., yurist; EPSHTEYN, A.; KOROTKOV, V., yurist

Our consultation. Sov. profsoiuzy 18 no.2:46-47 Ja '62.
(MIRA 15:4)

1. Starshiy konsul'tant pravovogo sektora Vsesoyuznogo tsentral'nogo soveta professional'nykh soyuzov (for Epshteyn).
(BONUS SYSTEM) (GRIEVANCE PROCEDURES)
(MEDICINE, INDUSTRIAL)

GOL'DSHTEYN, M., doktor tekhn.nauk

Bearing capacity of foundations composed of filled ground. Bud. mat. i konstr. 4 no.1:51-52 Ja-F '62. (MIRA 15:7)
(Foundations)

SIMONESKU, N. [S[illegible], [illegible]]; GOL'DSHTEYN, M.

The implantation [illegible] the [illegible] gland into the portal system of the liver ([illegible] and [illegible]). Probl. endokr. i gormonoter. 9 no.[illegible] [illegible]-Ap'[illegible] (MIRA 17:1)

1. I[illegible] K.I.Par[illegible], [illegible]

GOLDSTEYN, M.A.

New modification of handle for thermocautery. Vest. otorinolar.
no.5:81-82 Sept-Oct 1950. (CIML 20:1)

1. Petropavlovsk-on-Kamchatka.

GOL'DSHTEYN, M.A.

New apparatus for measurement of nasal respiration. Vest. otorinolar.
13 no.3:77 May-June 1951. (CLML 20:11)

1. Of the Otolaryngological Division, Second Medical Association
(Head Physician -- L.I. Baronova), Kokand.

GOL'DSHTEYN, M. A.

4. Mucous Membrane - Inflammation

7. Conservative therapy of hypertrophic rhinitis. Vest. oto-rin., 14, No. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, June 1952. Unclassified.

GOL'DSHTEYN, M. A.

Nose - Diseases

Local argyrosis. Vest. oto-rin. 15, No. 1, 1953.

SO: Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

GOL'DSHTEYN, M.A., kandidat meditsinskikh nauk

Injuries of the soft palate. Stomatologiia no.6:29-30 N-D '54.
(MLRA 8:1)

(PALATE, wounds and injuries
of soft palate, surg.)
(WOUNDS AND INJURIES
soft palate, surg.)

USSR/Human and Animal Physiology - Respiration. V-5

Abs Jour : Ref Zhur - Biol., No 2, 1958, 8664

Author : M.A. Gol'dshteyn
Inst : -
Title : A Study of Nasal Respiration

Orig Pub : Vestnik oto-rino-laringologii, 1956, No 1, 60-61

Abstract : The rate of inspiration and expiration through one or both of the nasal apertures was studied as a characteristic of nasal respiration. Described are the method employed and the values obtained for healthy human subjects.

Card 1/1

GOL'DSHTEYN, M.A. (Grodno)

Stand for experimental animals. Lab.delo 2 no.6:23-24 N-D '56. (MLRA 9:12)

(VETERINARY INSTRUMENTS AND APPARATUS)

GOL'DSHTEYN, M.A., kandidat meditsinskikh nauk.

Examination of nasal breathing. Vest. oto-rin. 18 no.1:60-61 Ja-F '56.
(MLRA 9:6)

(RESPIRATION
nasal breathing, testing with manometer device)
(OTORHINOLARYNGOLOGY, appar. and instruments
device for testing nasal breathing)

GOL'DSHTEYN, M.A., kandidat meditsinskikh nauk (Grodno)

Bougie of contrast material for dilatation of the esophagus. Vest. oto-rin. 18 no.3:66 My-Je '56. (MLRA 9:8)

(ESOPHAGUS,
dilat. with bougie of contrast material under x-ray control (Rus))

17(8)

SOV/177-58-5-26/30

AUTHOR: Gol'dshteyn, M.A., Lieutenant-Colonel of the Medical Corps

TITLE: A Machine for Manufacturing Gypseous Bandages (Stanok dlya izgotovleniya gipsovykh bintov)

PERIODICAL: Voyenno-meditsinskiy zhurnal, 1958, Nr 5, pp 87-88 (USSR)

ABSTRACT: The author has designed a machine for simultaneously cutting, winding and covering 8 bandages with gypsum. The machine has an output capacity of 150 gypseous bandages per hour. Due to its small size and weight, it can be used under any conditions. The machine is operated by one person. There are 1 photograph and 2 diagrams.

Card 1/1

GOL'DSHTEYN, M.A., kand.med.nauk

Diagnostic value of studies of the cellular components in water from ear lavage. Zdrav.Belor. 5 no.6:28-30 Je '59. (MIRA 12:9)

1. Iz voyennogo gospitalya (nachal'nik gospitalya V.M.Kuznetsov).
(EAR--DIAGNOSIS) (PATHOLOGY, CELLULAR)

GOL'DSHTEYN, M.A., kand.med.nauk

Treatment of chronic tonsillitis. Zdrav.Belor. 5 no.9:65-66 S '59.
(MIRA 12:12)

1. Iz voyennogo gospitalya (nachal'nik gospitalya V.M. Kuznetsov).
(TONSILS--SURGERY)

GOL'DSHTEYN, M.A., kand.med.nauk

Raspatory and suction tube. Zdrav. Bel. 7 no. 2:56 F '61.
(MIRA 14:2)

1. Iz voyennogo gospitalya (nachal'nik gospitalya - polkovnik V.M. Kuznetsov).
(SURGICAL INSTRUMENTS AND APPARATUS)

GOL'DSHTEYN, M.A., kand.med.nauk

Tonsillar otalgias. Zdrav. Bel. 7 no.10:27-28 O '61. (MIRA 14:11)
(TONSILS--DISEASES) (EAR--DISEASES)

GOL'DSHTEYN, M. I.

"Formation of Ice Layers in Dispersive Systems," Merzlotovedeniye (Permafrost Science), Vol 1, No 2, 1946 (127-128).
(Meteorologiya i Gidrologiya, No 6 Nov/Dec 1947)

SO: U-3218, 3 Apr 1953

BOGACHEV, I.N.; [illegible], [illegible]; [illegible], [illegible], kand. tekhn. nauk, retsenzent; [illegible], A.V., inzh., red.

[Increasing cavitation-erosion resistance of machine parts] Povyshenie kavitatsionno-erozionnoi stoikosti detalei mashin. [illegible], Izd-vo "Mashinostroenie," [illegible]. [illegible].
(MIRA [illegible])

USSR/Human and Animal Physiology - Blood. Blood Diseases. T-4

Abs Jour : Ref Zhur - Biol., No 1[illegible], 1958, 68113

Author : Gol'dshteyn, M.I., Fedorova, L.G.
Inst * :
Title : Treating True Polycythemia Patients with Radioactive Phosphorus.

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Orig Pub : Sov. meditsina, 1956, No 12, 25-28.

Abstract : Aged 25-55 years 11 true polycythemia patients (9 men and 2 women) in whom the disease has lasted for up to 12 years, took P^{32} internally on an empty stomach in doses of 5 ml of a 5 percent glucose solution (single dose, 1-2 mcurie, entire dose, 3-8 mcurie). P^{32} was administered every 6-8 days under strict supervisoin. At the end of the treatment the general condition of the patients was found to be good; 2-3 months later blood normalization was observed to have taken place. Skin and mucosa were of normal color. Remissions were of a stable and long-lasting nature.

Card 1/1 * Kazan Med Inst, -- M.B. Gol'[illegible]

ADRIANOVSKIY, A.F.; GOL'DSHTEYN, D.Ye., prof.; GOL'DSHTEYN, M.I.; MITTEL'BERG, Ya.B.; SUKHORUKOV, B.Z.; FAYZULLIN, M.Kh., prof.

Seventh All-Union Congress of Radiologists. Kaz.-med.zhur. 40 no.2:99-102 Mr-Ap '59. (MIRA 12:11)

1. Zasluzhennyy deyatel' nauki Tatarskoy ASSR (for D.Ye.Gol'dshteyn).

(RADIOLOGY, MEDICAL--CONGRESSES)

GOL'DSHTEYN, M.I., prof. (Kazan'); ZAYTSEV, V.M., assistent (Kazan')

Detection of congenital heart defects. Kaz.med.zhur. no.5:55-57
S-O '60. (MIRA 13:11)
(HEART--ABNORMITIES AND DEFORMITIES)

GOL'DSHTEYN, M.I., prof.; BEREZOVSKIY, B.S., assistent

"Course in medical roentgenology and radiology" by I.A.Shekhter and A.S.Pavlov. Reviewed by M.I.Gol'dshtein and B.S.Berezovskii. Vest. rent. i rad. 36 no.4:86-89 Jl-Ag '61. (MIRA 15:2)

1. Zaveduyushchiy kafedroy rentgenologii i radiologii Kazanskogo gosudarstvennogo meditsinskogo instituta (for Gol'dshteyn).
2. Kafedra rentgenologii i radiologii Kazanskogo gosudarstvennogo meditsinskogo instituta. Glavnyy radiolog Ministerstva zdravookhraneniya Tatarskoy ASSR (for Berezovskiy).
(RADIOLOGY, MEDICAL) (SHEKHTER, I.A.) (PAVLOV, A.S.)

GOL'DSHTEYN, M.I., prof.; MUSIN, M.F., aspirant

Arteriography in patients with obliterating endarteritis under ambulatory conditions. Khirurgiia 37 no.5:28-30 My '61.
(MIRA 14:5)

1. Iz kafedry rentgenologii i radiologii (zav. - prof. M.I. Gol'dshteyn) Kazanskogo meditsinskogo instituta.
(ANGIOGRAPHY) (ARTERIES--DISEASES)

GOL'DSHTEYN, M.I., prof.

X-ray diagnosis of malignant neoplasms in patients after stomach surgery. Kaz. med. zhur. no.2:28-31 Mr-Ap '62.
(MIRA 15:6)

1. Kafedra rentgenologii i radiologii (zav. - prof. M.I. Gol'dshteyn) Kazanskogo meditsinskogo instituta.
(STOMACH—CANCER) (STOMACH—SURGERY)

GOL'DSHTEYN, M.I., prof.; NORKINA, U.Z.

Results of the treatment of thyrotoxicosis with I-131 using an abbreviated fractional method. Kaz.med. zhur. no.5:46-48 S-O'63 (MIRA 16:12)

1. Kafedra rentgenologii i radiologii (zav. - prof. M.I. Gol'dshteyn) Kazanskogo meditsinskogo instituta.

GOL'DSHTEYN, M.I.; GUTERMAN, S.G. [deceased]

Effect of small additions of vanadium on the hardenability of structural carbon steel. Metalloved. i term. obr. met. no.7:40-42 Jl '64.
(MIRA 17:11)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov.

GOL'DSHTEYN, M.I., kand. tekhn. nauk; KAMPANIYETS, G.M., inzh.; PANFILOVA, L.M., inzh.; RABINOVICH, D.M., inzh.; MURAV'YEV, Ye.A., inzh.; LOSHKINA, N.A., inzh.

Effect of vanadium and heat treatment on th properties of St. 3kp rimmed steel. Stal' 24 no.10:925-927 O '64.

(MIRA 17:12)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov i Nizhne-Tagil'skiy metallurgicheskiy kombinat.

GOL'DSHTEYN, M.I.; BEREZOVSKIY, B.S.

Protective action of the organophosphorus preparation nibufin in the irradiation of white mice with a lethal dose of X rays. Biul. eksp. biol. i med. 60 no. 10:68-69 O '65 (MIRA 19:1)

1. Kafedra rentgeno-radiologii (zav. - prof. M.I. Gol'dshteyn) Kazanskogo meditsinskogo instituta. Submitted March 14, 1964.

GOL' D[illegible] , [illegible]

[illegible]

Avtopogruzchiki na [illegible] (avto [illegible]) ((Krasnyy stroitel')) Myekhanizatsiya trudoyemkikh i tyazhyelykh rabot, 1949, [illegible], [illegible], s.1[illegible]-20

So: LETOPIS' No. 34

GOL'DSHTEYN, M.I.

5

The application of microradioautography to the study of chromium redistribution during diffusional annealing. I. E. Bolotov and M. I. Gol'dshtein. *Zavodskaya Lab.* 21, 828-30(1955).—Radioactive Cr^{51} was added to the steel as a tracer element, by placing an Fe ampul contg. Cr_2O_3 + powd. Al into the fused steel sample (the Al being added to reduce the Cr_2O_3 and deoxidize the steel). Cr_2O_3 is completely reduced to Cr. The 800-g. sample was cut into sections which were kept at temp. of 1200, 1300, and 1400° for various lengths of time (the samples were sealed in quartz tubes), then rapidly cooled and tested. The method provides means of testing liquation nonuniformities of different elements in steel. W. M. Sternberg

HS

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GOL'DSHTEYN, M-I

1

Metal

1178* (Russian.) Ways of Detecting the Woody Fracture. K voprosu ob [illegible] vyiavleniia shifernogo izloma. M. I. Gol'dshtein. *Stal'*, v. 16, no. 9, Sept. 1956, p. 809-811.

Woody fracture is related to the laminar inhomogeneity of metal structure.

GOLDSHTEYN, M.I.

Application of autoradiography to the study of intercrystalline liquation in steel. I. B. Bolotov, M. I. Goldshteyn, A. A. Popov, and A. B. Fedorov. *Zavodskaya Lab.* 22, 682-8(1956).—Liquation of S, P, and W in steel was investigated by means of radioactive isotopes of the respective elements. S^{35} and P^{32} were added to different batches of molten steel and stirred thoroughly. Half of this batch was poured into a cold cast-iron crucible where the crystn. was completed in 4-6 min. The other half was cooled in the original crucible where the melt crystd. in 30-60 min. After annealing, sections of each casting were polished and placed in contact with x-ray films. Segregation of S and P was much weaker in the slow-cooling castings. A more precise detn. of the effect of cooling was made with W^{185} in the form of WO_3 which was mixed with Al (for reduction) and added to the molten steel (16 kg.). Small samples (160 g.) were heated to 1500° and cooled as follows: (a) poured into H_2O, (b) remained in the furnace (1500°) with the heating element turned off, (c) as in (b) but with the heating element gradually reduced. In (a) cooling was instantaneous, in (b) it solidified in 3-5 min., in (c) it solidified in 1.5-2 hrs. The samples were polished to a mirror finish, dried for 10 hrs. at 100-200°, and placed in contact with x-ray films in a special press holding 12 samples. All films were exposed 78 hrs. and developed in identical manner. The films were scanned with a microphotometer. The content of W in the cryst. axis and in the space between the axes in (a), (b), and (c) were 0.87, 1.87; 0.84, 0.93; 0.82, 1.05 (exptl. error below 3.5%). Samples of (c) sealed in quartz ampuls were heated for different lengths of time (up to 24 hrs.) at 1100 and 1200°. The degree of homogenization thus affected increased with the time and the temp., indicating that diffusion of W occurred after crystn. as well as during slow crystn.

I. Bencowitz

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[illegible]

137-1958-2-2497

Translation from: Referativnyy zhurnal Metallurgiya, 1958, Nr 2, p 43 (USSR)

AUTHORS: Gol'dshteyn, M.I., Bolotov, I.Ye., Sklyuyev, P.V.

TITLE: An Investigation of the Liquation Phenomena in a Steel Ingot (Issledovaniye likvatsionnykh yavleniy v stal'nom slitke)

PERIODICAL: V sb.: Primeneniye radioaktivn. izotopov v chernoy metallurgii. Chelyabinsk, Knigoizdat, 1957, pp 106-119

ABSTRACT: Based on a critical review of existing methods of determining quantitatively the extent of dendritic liquation in a steel ingot, a method is proposed which involves autoradiographing metallographic specimens with the aid of photographic plates, then making a quantitative determination of the concentration of an element from exposure density of the plates. The dendritic liquation of C, S, and P was studied on small laboratory ingots, and in the case of S and P also on 7.4-ton industrial ingots of medium-carbon alloy steel. In the tests involving C and S ordinary metallographic specimens were used; in the tests relating to P laminae up to 0.05 mm thick were used. The laboratory melts were poured into two ingots: one, weighing 10 kg, was cast into a mold; the other cooled in a furnace crucible with the current on

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137-1958-2-2492

An Investigation of the Liquation Phenomena in a Steel Ingot

In the case of the quickly cooled ingot, in the region of the acicular crystals, C became concentrated along the boundaries of the crystals, but at the center of the ingot it became concentrated in the interaxial spaces of the fine dendrites, the axes of which were poor in C. In the slowly cooled ingot the dendrites were larger, and the concentration of C in their axes was almost one half less than in the interaxial spaces. In the quick cooled ingot the dendritic liquation of P bore the same character as did that of C, but in the slow cooled ingot it was practically identical throughout the ingot. The S all concentrated in the interaxial and interdendritic spaces, and its distribution throughout the ingot was similar to that of P, but with more clearly defined boundaries. S, too, was encountered in the form of sulfurous inclusions which were practically insoluble in the solid metal. In the 7.4 ton ingot the dendritic liquation of P was obviously more pronounced in the bottom part than in the upper part, which accounts for the fact that metal from the bottom part of an ingot is oftentimes of poorer quality. The S concentrated in the interaxial and interdendritic spaces in the form of nonmetallic inclusions, the dimensions of which increased in proportion to their proximity to the center of the ingot, i.e., to their remoteness from its

Card 2/3

[illegible]

An Investigation of the Liquation Phenomena in a Steel Ingot

surface; also toward the center the dendritic orientation was more sharply defined. At the bottom of the ingot a dark band rich in S and poor in P, was noted at the surface. The appearance of this band was attributed to a break in the contact between ingot and mold. Bibliography: 15 references.

V. N.

1. Steel castings--Phenomena--Analysis 2. Liquids--Applications

Card 3/3

137-58-6-13415

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 324 (USSR)

AUTHORS: Gol'dshteyn, M. I., Mikhalev, M. S.

TITLE: New Types of Low-alloy Steels (Novyye marki nizkolegirovannykh staley)

PERIODICAL: Byul. nauchno-tekhn. inform. Ural'skiy n.-i. in-t chernykh metallov, 1957, Nr 3, pp 64-75

ABSTRACT: Studies were carried out in order to investigate the effect of Mn, Cr, V, and Ti on the mechanical properties of low-carbon steel, as well as on the properties of low-alloy Mn-V and Cr-Mn steels. It is established that the σ_b, σ_s, and σ_{-1} values of low-carbon steel are increased if Mn, Cr, V, and Ti are present in amounts of up to 1.2, 1.3, 0.12, and 0.05%, respectivdy, while the ψ, δ, and a_k values are changed only slightly at room temperature. The strength of steel is a linear function of the content of elements indicated, the slope of the line representing the degree of strength increase due to a given element. According to the order of their strengthening effect, the elements can be arranged as follows: Ti, V, C, Mn, Cu, and Cr. The following formula is proposed for an approximate computation of

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137-58-6-13415

New Types of Low-alloy Steels

the σ_s value of steel alloyed with the elements indicated and containing 0.4% Si, exactly (*) 0.3% Ni, *0.04% P, *0.04% S: $_s$ =18+28% C+9% Mn+2% Cr+36% V+77% Ti+6% Cu. Two types of low-alloy steels are proposed: 15GF and 15 KhGT. Their chemical compositions are as follows: 15GF: 0.11-0.17% C, 0.9-1.2% Mn, 0.17-0.37% Si, *0.3% Cr, *0.3% Ni, *0.3% Cu, 0.08-0.14% V, *0.04% P, *0.4% S; 15KhGT: 0.11-0.17% C, 0.7-1.00% Mn, 0.17-0.37% Si, 0.5-0.8% Cr, *0.3% Ni, *0.3% Cu, 0.04-0.08% Ti, *0.04% P, *0.4% S. Steels 15GF and 15 KhGT exhibit sufficiently good mechanical properties, are readily manufactured and welded, and may be employed in welded structures, particularly in manufacture of railroad cars, in place of standard carbon steels.

I. B.

1. Steel--Development 2. Steel--Mechanical properties 3. Steel --Applications

Card 2/2

147-58-6-13408

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 323 (USSR)

AUTHORS: Mikhalev, M.S., Gol'dshteyn, M.I.

TITLE: The Effect of Aluminum on Properties of Low-alloy Steel With Elevated Phosphorus Content (Vliyaniye alyuminiya na svoystva nizkolegirovannoy stali s povyshennym soderzhaniyem fosfora)

PERIODICAL: Byul. nauchno-tekhn. inform. Ural'skiy n.-i. in-t chernykh metallov, 1957, Nr 3, pp 76-79

ABSTRACT: Despite their good anti-corrosion and strength characteristics, steels with a high P content are not widely employed in the USSR owing to the unstable properties of different individual steel smeltings and, in particular, decreased a_k values and increased susceptibility to aging. An addition of Al eliminates all these drawbacks. The investigations have demonstrated that an Al content of 0.1% is optimal for purposes of neutralization of the harmful effects of P since at that composition a fine-grained (grade 8) structure is achieved, while the contamination of steel with non-metallic inclusions remains small. 1. Steel--Properties 2. Phosphorus--Metallurgical effects 3. Aluminum--Metallurgical effects

I. B.

Card 1/1

SOV/133-58-10-24/31

AUTHORS: Mikhalev, M.S. and Gol'dshteyn, M.I., Engineers

TITLE: The Influence of Alloying Elements and Calculation of Strength of Low-alloy Steels (Vliyaniye legiruyushchikh elementov i raschet prochnosti nizkolegirovannykh staley)

PERIODICAL: Stal', 1958, Nr 10, pp 942 - 945 (USSR)

ABSTRACT: The influence of alloying elements (Mn, Si, Cr, Ni, Cu, P, V and Ti) individually and in combination, on the strength properties of low-carbon steels was investigated. In addition, the influence of carbon in the properties of technical and alloyed iron was studied. Experimental steels were smelted in a 300 kg high-frequency basic furnace from low-carbon steel with a low content of other admixtures. Each heat was tapped into a few ladles to which a given amount of the studied elements was introduced. Steel was finely deoxidised with aluminium in the ladle (0.5 kg/t) and teemed into 16-kg ingots. Ingots were forged into plates 20 mm thick and normalised from 920 °C. Specimens for testing were cut from the middle of plates. From the experimental results (mean for 3 specimens) for each element a graph was made in co-ordinates - tensile strength, yield point - content of the element (Figures 1 and 3). As the

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relationships obtained were nearly linear, the degree of strengthening of metal by alloying elements could be evaluated by a conditional strengthening coefficient (tangent of the straight line with the abscissa). The coefficients calculated on the basis of experimental and literature data are compared in Figures 2 and 4. On the basis of analysis of the above data the following conclusions can be formed: a) all elements studied can be divided into two series according to decreasing degree of strengthening they impart to steel: yield point Ti, P, V, C, Mn, Cu, Si, Cr and Ni; tensile strength C, Ti, P, V, Si, Mn, Cr, Cu and Ni; b) the dependence of strength indices of steels on the content of the above elements within the range studied can be presented by a straight line; c) the values for strengthening coefficients by each of the investigated elements for low-carbon and low-alloy two-four component steels are comparatively close, indicating the additivity of the influence of elements in various steels. Therefore, using the strengthening coefficients of each element, an approximate value for

SOV/133-58-10-24/31

The Influence of Alloying Elements and Calculation of Strength of Low-alloy Steels

tensile strength and yield point (kg/mm^2) can be calculated from the following formulae.

$$\sigma_s = 12.4 + 28C - 3.4Mn + 5.6Si - 5.5Cr + 4.5Ni + 8Cu + 36V - 77Ti + 59P + [3.0 - 0.2(h - 5)]$$

$$\sigma_B = 25.0 + 50C + 8Mn + 9.2Si - 7.4Cr + 3.4Ni + 5.7Cu + 32V + 94Ti + 96P + [2.1 - 0.14(h - 5)]$$

where numbers in front of the symbols of elements are mean values of strengthening coefficients (Figure 2,4) and the symbol of each element represents its concentration in steel, %, the last polynomial represents a correction for the thickness of an article h (mm). The above formulae can be used for calculating approximate strength of hot-rolled or normalised two-four component low-alloy plate steels (5-20 mm thick) providing the content of the alloying elements does not exceed %: C 0.2, Mn 1.6, Si 1.0, Cr 1.5, Ni 1.0, Cu 0.8, V 0.15, Ti 0.05 and P 0.15.

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SOV/133-58-10-24/31

The Influence of Alloying Elements and Calculation of Strength of Low-alloy Steels

The validity of the formulae was checked on 70 various steels; in 50% of the cases, the absolute error did not exceed ± 1 kg/mm^2 and in 70% of the cases ± 2 kg/mm^2. In the editorial note, a request is made to readers to publish appropriate material in order to check the proposed method of calculating strength of steel on the basis of its chemical composition.

There are 4 figures and 9 references, 6 of which are Soviet, 2 English and 1 German.

ASSOCIATION: Ural'skiy n.-i. institut chernykh metallov (Ural Scientific Research Institute for Ferrous Metals)

Card 4/4

24(8) PHASE I BOOK EXPLOITATION SOV/2117

Soveshchaniye po eksperimental'noy tekhnike i metodam vysokotemperaturnykh issledovaniy, 1956

Eksperimental'naya tekhnika i metody issledovaniy pri vysokikh temperaturakh; trudy soveshchaniya (Experimental Techniques and Methods of Investigation at High Temperatures; Transactions of the Conference on Experimental Techniques and Methods of Investigation at High Temperatures) Moscow, AN SSSR, 1959. 789 p. (Series: Akademiya nauk SSSR. Institut metallurgii. Komissiya po fiziko-khimicheskim osnovam proizvodstva stali) 2,200 copies printed.

Resp. Ed.: A.M. Samarin, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: A.L. Bankvitser.

PURPOSE: This book is intended for metallurgists and metallurgical engineers.

COVERAGE: This collection of scientific papers is divided into six parts: 1) thermodynamic activity and kinetics of high-temperature processes 2) constitution diagram studies 3) physical properties of liquid metals and slags 4) new analytical methods and production of pure metals 5) pyrometry, and 6) general questions. For more specific coverage, see Table of Contents.

Experimental Techniques and Methods (Cont.) SOV/2117

Gol'dshteyn, M.I., I.Ye. Bolotov, and P.V. Sklyuyev. Investigation of Dendritic Liquation in Steel Ingots by Means of Radioactive Isotopes 724

Application of this method (autoradiography) permits both qualitative and quantitative determination of the dendritic liquation of various elements in steel. A study of the dendritic liquation of carbon, phosphorus, and sulfur by this method indicated that the content of these elements is impoverished in the dendrite axes, but high in the interaxial spaces. The concentration of carbon and phosphorus in the interaxial spaces is approximately twice that in the axes. Nearly all of the sulfur is contained in the interaxial spaces.

Karachentseva, L.N. Determination of the Sources of Contamination of Ball Bearing Steel by Means of Radioactive Isotopes 73[illegible]

The radioactive-isotope method (radiometry and radiography), in combination with other methods, may be successfully used for the study of non-metallic inclusions introduced into the steel as a result of the disintegration of refractories from the furnace, pouring spout, ladle, and runner head. The amount of such inclusions formed by the disintegration of refractories during the tapping and teeming of ball bearing steel is insignificant (of the order of 10^{-5}—10^{-7}% by weight). The distribution of such foreign particles throughout the ingot is random. As a rule the inclusions are rather coarse and range in shape from globular to oblong.

S/137/61/000/001/002/043
A006/A001

Translation from: Referativnyy zhurnal, Metallurgiya, 1961, No. 1, p. 43, # 1V340

AUTHOR: Gol'dshteyn, M.I.

TITLE: Investigation of Segregation and Non-Metallic Inclusions in 7.4 Ton Sheet Steel Ingots

PERIODICAL: "Byul. nauchno-tekhn. inform. Ural'skiy n.-i. in-t chern. metallov" 1959, No. 7, pp. 50 - 58

TEXT: 30ХМА (30KhMA) grade steel was melted by the scrap-ore process in a 140-ton open-hearth furnace. Preliminary deoxidizing was made in the furnace with Si-Mn; final deoxidizing was performed in the ladle with Fe-Si and Al (400 g/t). An experimental ingot was syphon-cast on the last three-position bottom plate. After cooling the ingot was subjected to high-temperature tempering. Templets were cut out of the center of the ingot cross section. The templets were used to obtain Bauman imprints and for subsequent deep etching. Samples were taken off various spots of the ingots to determine carbon, Mn, Si, P and S. Non-metallic impurities were studied by the metallographical method. In indivi-

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S/137/61/000/001/002/043
A006/A001

Investigation of Segregation and Non-Metallic Inclusions in 7.4 Ton Sheet Steel Ingots

dual cases chemical analysis of the impurities was made. It was found that the ingot had a heterogeneous structure and strongly pronounced "whiskers". Al oxides and sulfides are the basic types of non-metallic impurities revealed in the ingot. The Al oxides are concentrated in the lower portion of the ingot, and the sulfides in its upper portion. The causes of formation of fine lamination, streaky heterogeneity and woodiness of fracture were investigated.

Ye. K.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

37142

18 8200

S/123/60/000/024/005/001
A005/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1960, No. 24, p. 16, # 132065

AUTHORS: Meandrov, L.V., Gol'dshteyn, M.I., Levitin, V.V.

TITLE: The Determination of Deformation Resistance of Alloyed Steels at High Temperatures

PERIODICAL: Byul. nauchno-tekhn. inform, Ural'skiy n.-i. in-t chern. metallov 1959, No. 7, pp. 59-66

TEXT: Results are presented from the determination of deformation resistance of steels 40ХН (40KhN), 40ХН2М (40KhN2M), and 40Х2Н2М (40Kh2N2M) under static tension and dynamic compression. The diameter of the tension samples was 8 mm, the gauge length was 60 mm, the tension speed was 1.0-1.5 mm/min, the test temperatures were 900, 1,000, 1,150 and 1,200°C. The compression tests were conducted on the frictional pressing machine. The cylindric samples were 20 mm in diameter and 14 mm in height. The downstroke speed of the press slider with the striker was 180 mm/sec which corresponds to the deformation rate of 7.8 sec^{-1}.

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87442

S/133/60/000/024/002/014
A005/A001

The Determination of Deformation Resistance of Alloyed Steels at High Temperatures

All steels showed at small deformation degrees the strain-hardening being the greater the higher alloyed the steel and the lower the temperature. The highest strain-hardening was observed with steel 40Kh2N2M, the lowest with steel 40KhM which is obviously connected with the decrease of recrystallization speed in steel 40Kh2N2M under the action of elements Cr and Mo originating carbide. For each temperature exists a deformation degree beginning from which the weakening processes compensate the strain-hardening processes. The deformation degree corresponding to the maximum strain-hardening decreases with increasing temperature for all steels from 25-30% at 900°C down to 10-15% at 1,200°C. An increase in the content of elements Cr and Mo originating carbide in the investigated steels increases the hardenability of the steel as well as its deformation resistance. There are 6 figures and 2 references.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

18 1114 [illegible]

S/126/60/010/006/017/022
E111/E452

AUTHORS. Guterman, S.G., Gol'dshteyn, M.I. and Noskov, A.M.

TITLE. Dispersion Hardening and Fine Crystal Structure of Carbon Steel With Small Additions of Vanadium

PERIODICAL Fizika metallov i metallovedeniye 1960 Vol.10 No 6, pp.903-906

TEXT: The object of the present work was to study the influence of small (0.01 to 0.093%) vanadium additions on the hardening of carbon steel and elucidate the causes of such hardening. Published investigations on this subject (Ref.2 to 4) deal with relatively high vanadium contents. Induction melted type 40 steel was used. 0.04% Aluminium was added in the furnace to deoxidize the metal; vanadium additions were made in the ladle or furnace. Ingots were forged into 14 x 14 mm bars which were normalized from 840°C. Fig.1 shows hardness as a function of tempering temperature (400 to 650°C for 1 hour) for hardened specimens with various vanadium contents; vanadium has no effect at 400°C but at higher temperatures it increases hardness. The influence is decreased if hardening temperature is reduced from 950 to 840°C.

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S/126/60/010/006/017/022
E111/E452

Dispersion Hardening and Fine Crystal Structure of Carbon Steel With Small Additions of Vanadium

As shown in Fig.2, the presence of 0.01% of vanadium increases the strength characteristics of hardened and tempered (600 °C) specimens further increases in vanadium having little affect, however, vanadium reduces plasticity somewhat. Chemical analysis of electrolytically produced carbide residues and mosaic block size determinations were carried out. For the latter, a type УРС-50И (URS-50I) X-ray ionization installation was used. Fig.3 shows, as functions of total vanadium content, the vanadium content in the carbide residues (as % of dissolved metal) and the hardness and block size for specimens hardened from 950 °C and tempered at 600 °C. This shows that the hardening with small vanadium additions is due to precipitation of vanadium carbides and reduction in block size. This was confirmed by results (Fig.4) for specimens of a heat with up to 1.7% V, hardened from a temperature giving complete solution of carbides and tempered at 600 °C. [Abstractor's note: The abscissa of Fig.2 and 4 incorrectly designated as "W".] There are 4 figures, 2 tables

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S/126/60/010/006/017/022
E111/E452

Dispersion Hardening and Fine Crystal Structure of Carbon Steel With Small Additions of Vanadium

and 6 references: 4 Soviet and 2 non-Soviet

ASSOCIATION: Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov (Ural Scientific Research Institute for Ferrous Metals)

SUBMITTED: May 20, 1960

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S/133/60/000/011/017/023
A054/A029

AUTHORS: Mikhalev, M.S., Engineer, Gol'dshteyn, M.I., Candidate of Technical Sciences

TITLE: Vanadium-Containing Low-Alloy Steel for Railroad Cars and Constructions

20

PERIODICAL: Stal', 1960, No. 11, pp. 1026-1029

TEXT: A new type of low-alloy steel (15ГФ = 15 GF) was tested produced from the vanadium-containing ores of the Kachkanarsk deposit. The new steel had the following composition: C 0.11-0.17%; Mn 0.9-1.2%, Si 0.17-0.37%; V 0,04-0.09%, S and P $\leq$ 0,040%. Three test meltings were performed on an industrial scale (in 50 and 140 ton open-hearth furnaces); the charges No. 237, 368 and 686 contained 1.20% Mn, 0.09%V; 0.96% Mn, 0.08 V and 1.10% Mn and 0.09% V, respectively. The mechanical properties of the new steel were examined on sheets (4-40 mm thick) and on beams of various types (double-T, etc.), rolled from the test ingots (5 and 7 t in weight). The values obtained for mechanical properties, both longitudinally and transversely, were well above the standards set for railroad car steels. In the following table the numerators indicate the actual values recorded and the denominators the

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S/133/60/000/011/017/023
A054/A029

Vanadium-Containing Low-Alloy Steel for Railroad Cars and Constructions

Standard requirements:

σ_B kg/mm^2	σ_s kg/mm^1	δ_{10} %	a_k kgm/cm^2 + 20°	temp. -40°	Bending angle degree
53-64.1 > 48	37-48.1 ≥ 35	18-24.5 > 18	9.5-15.0 ≥ 8	5.5-9.2 ≥ 4	180 180

The aging coefficient for the new steel was about 35% lower than for the Ст.3 (St.3) type steel (65-75%). The tests carried out on the decomposition kinetics of austenite for the purpose of investigating the behavior of the 15GF type steel during continuous cooling after rolling and after welding showed that the austenite of this type of steel was more stable than that of the St.3 type steel. This was due to the 15GF steel being alloyed with Mn and V, the carbides of which were completely absorbed in austenite at the test temperatures (200;400;600;800 and 1,000°C). The stamping properties of the 15GF steel were found to be satisfactory. The power, however, required for stamping this steel was 25-30% higher than for St.3 steel, but this goes for all low-alloy, high strength steels (15ХСНД, 15KhSND; 09Г2 - 09G2, etc).

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S/133/60/000/011/017/023
A054/A029

Vanadium-Containing Low-Alloy Steel for Railroad Cars and Constructions

The weldability of the new steel was tested under the severest conditions with the same electrodes, fluxing material and wires as used for the St.3 steel. The tests proved that the 15GF steel has good welding properties, the welding seams are strong and have a great tenacity. As the rails and constructions (bridges, waggons, etc.) manufactured from this steel are normally subjected to great fluctuations in loading, vibration strength was also investigated. From the tests mainly carried out by A.Ye. Asnis (Ref 5) it was established that in this respect the new steel type was not different from other low-alloy and low-carbon content steels. Economic calculations and comparisons with similar steel types showed that the alloying costs for the 15GF type steel were by 54 rubles/ton lower than for the 15KhSND type and, therefore, the new steel can be used as substitute for low-alloy steels containing nickel. There are 2 figures, 1 table and 11 references: 9 Soviet, 1 English, 1 German.

ASSOCIATION: Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov
(Ural Scientific-Research Institute for Iron and Steel)

Card 3/3

88[illegible]

S/133/60/000/012/012/015
A054/A027

18.1110

AUTHORS: Gol'dshteyn, M.I., Candidate of Technical Sciences, and Guterman, S.G., Candidate of Technical Sciences

TITLE: Influence of Small Additions of Vanadium on the Properties of Structural Carbon Steel

PERIODICAL: Stal', 1960, No. 12, pp. 1130-1134

TEXT: The influence of the vanadium content of steel in amounts between decimal and whole percentages on some of its properties, for instance, close-grained structure, trend to disperse-hardening at high temperature tempering, relatively high yield point, etc., has been discussed already by some authors (2/E. Houdremeont, H. Bennek, H. Schrader, Archiv für das Eisenhuttenwesen, 1932, No. 1; 3/V.S. Mes'kin, Principles of Steel Alloying, Metallurgizdat, 1959; 4/S.G. Guterman, Investigations of Metallography and Heat Treatment of Steel, Proceedings of the Ural Scientific Research Institute of Steel and Iron, 1938, 2nd issue; 5/ I. Zimmermann, R. Aborn, E. Bain, Transactions of the American Society of Metals, 1937, v.25, No. 3). As there were no data of the influence of adding small amounts of vanadium (less than 0.1%) however, investigations were carried out to determine the mechanical properties of structural carbon steels containing less than 0.1% vanadium. The tests were made in a 100 kg

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A054/A027

Influence of Small Additions of Vanadium on the Properties of Structural Carbon Steel

high frequency induction furnace with basic lining, melting steels with compositions approximating those of the steel brands 20,30,40,50 and 65, deoxidizing with aluminum (0.04% of the charge weight). The vanadium content of the castings varied between 0.01 and 0.10%. At the same time steel with a vanadium content of 1.7% was made in a 300 kg induction furnace. The ingots weighed 8 kg, the specimens were 14 x 14 mm in cross section or 45 mm in diameter. In the hardness tests the 14 x 14 x 10 mm specimens with various vanadium contents were hardened in water and tempered at 400,500,550,600 and 650°C for one hour at each temperature. After tempering at 400°C no difference in hardness was found between the steels containing vanadium and those without vanadium. After tempering at 500°C and above this temperature, the vanadium containing steel displayed greater hardness than the steel without vanadium and it was found that a maximum effect could be obtained with vanadium contents of 0.01-0.02%. With higher annealing temperatures the difference between the hardness of vanadium containing and non-vanadium steels increased and reached its maximum above an annealing temperature of 600°C (Fig. [illegible]). When the influence of long-term annealing was investigated, it was established that after
Card 2/9

38 Co

[illegible]

Influence of Small Additions of Vanadium on the Properties of [illegible] Carbon Steel

annealing at 55?°C for 1.. hours and longer, the [illegible] of vanadium-containing and non-vanadium steels was similar to that found when annealing at 550°C for 1 hour. In order to establish the analogy in behavior during annealing between low-vanadium steels and steels with a higher (up to 1.7%) vanadium content, samples from brand 40 were hardened from the temperature at which the vanadium carbides are completely dissolved in austenite and annealed at 400-650°C. It was found that with a vanadium content of [illegible] and higher, and after annealing at 600°C the increase in hardness was greater with higher vanadium contents and the graphs (Fig. 2) representing this process clearly indicate the maximum, i.e., the "secondary" hardness which is characteristic for disperse-hardening. The tensile strength [illegible] of 50 and [illegible] brand steels were tested by oil-hardening from [illegible], respectively, while steel brand 40 was hardened in water [illegible]. The maximum deviations in strength were found between the vanadium-containing and non-vanadium steels after annealing at 600°C, while the maximum increase in strength and in yield point was obtained by adding [illegible] vanadium ([illegible] 15 kg/sq mm). [illegible] the tests made with low-vanadium steels and [illegible] samples.

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[illegible]
S/133/[illegible]
[illegible]

Influence of Small Additions of Vanadium on the Properties of Structural Carbon Steel

containing 1.7% vanadium it can be proved that disperse hardening takes place when alloying more than 0.1-0.2% vanadium to the steel. The main features of the analogy between low and high-vanadium steels were discovered from the retardation of the increase in hardness of the low-vanadium steel and the "secondary" hardness of high-vanadium steels took place for both types of steel after annealing in the same temperature range; when the hardening temperature was lowered the difference between the hardness curves of both steels increased and so did the "secondary" hardness of high-vanadium steels; the higher the hardening temperature, the greater the solubility of vanadium carbides and the higher the hardness after annealing for both steels (Fig. 1). The weakening of the change in hardness effect with the annealing temperature rising, can be explained by the retardation of diffusion of vanadium carbide. This can also be proved by the phenomenon that when the annealing time at a relatively lower temperature is increased the same effect can be obtained as when annealing time is shorter but the temperature higher. That disperse-hardening takes place also in low-vanadium steels, can also be proved by the presence of vanadium in the carbide phase [illegible] chemically (chemical analysis [illegible] by [illegible] steel

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A054/A027

Influence of Small Additions of Vanadium on the Properties of Structural Carbon Steel

annealed at 600°C and by the increase in vanadium content of the condensate when the general vanadium content of the metal is increased, moreover by the sudden decrease in vanadium content of the carbide condensate of steel annealed at 400°C. With hardening at 950°C and annealing at 400°C, the vanadium-content of carbide condensate is 0.017% of the weight of the dissolved metal, while the corresponding percentage with hardening at 950°C and annealing at 650°C is 0.064. However, the improvement in strength after hardening at high-temperature annealing can be attained only when vanadium is present in the steel in form of carbide. When during melting vanadium combines with oxygen, there will be no disperse hardening and strengthening caused by this phenomenon. There are 7 figures, 1 table and 8 references, 4 Soviet and 4 non-Soviet.

ASSOCIATION: Ural'skiy institut chernykh metallov (The Ural Institute of Steel and Iron)

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Influence of Small Additions of Vanadium on the Properties of Structural Carbon Steel

Table 1:

Chemical Composition of the Test Castings, %

Brand of steel	No. of melting	No. of ingot	C	Si	Mn	P	S	Cr	Ni	Cu
30	5	33;35;38;40	0,33	0,41	0,82	0,043	0,028	0,16	0,08	0,15
40	2	9; 11-16	0,40	0,25	0,66	0,033	0,048	0,18	0,06	0,11
40	7	49-56	0,37	0,23	0,92	0,032	0,045	0,26	0,09	---

Card 6/9

[illegible] 014/012/015

Influence of Small Additions of Vanadium on the Properties of Structural Carbon Steel

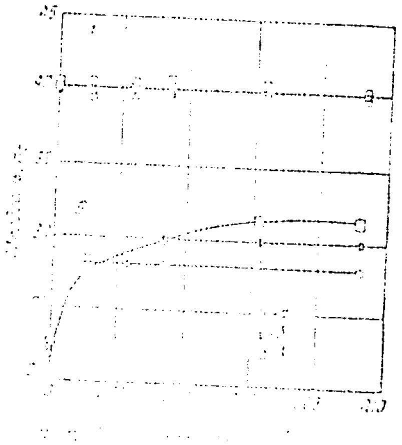

Fig. 1 - Influence of the vanadium content and hardening temperature on the hardness after annealing at [illegible] (a) [illegible]

a-hardening from 850°C; b-from 900°C; c-from 950°C

Vertical legend: hardness R_c

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[illegible] 21/112/115

Influence of Small Additions of Vanadium on the Properties of Structural Carbon Steel

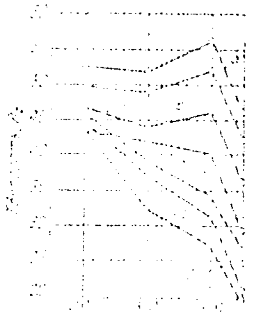

Fig. 2 - Influence of the annealing temperature on the hardness of steel brand 40 having the following vanadium contents:
a-no vanadium; b-0.03% vanadium;
c-0.06%; d-0.13%; e-0.47%;
f-0.71%; g-1.7%
Vertical legend: hardness, R_c

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88500

S/133/60/000/012/012/015
A054/A027

Influence of Small Additions of Vanadium on the Properties of Structual Carbon Steel

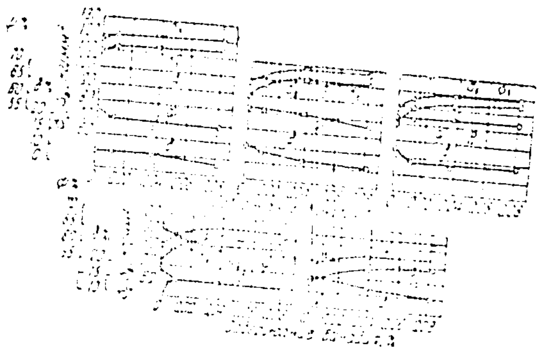

Fig. 4 - The dependence of the mechanical properties of steel (brand 35) on the annealing temperature (400-650°C) and vanadium content

A-annealing at 400°C; B-500°C; C-550°C; D-650°C

Horizontal legend: (twice) vanadium content, %
Vertical legend: (twice) kg/sq mm

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BURDAKOV, Dmitriy Dmitriyevich; TSUKERNIK, Zinoviy Grigor'yevich; YEL'KIN, S.A., inzh., retsenzent; ROMANOV, A.A., kand. tekhn. nauk, retsenzent; BENYAKOVSKIY, M.A., inzh., retsenzent; GOL'DSHTEYN, M.I., kand. tekhn. nauk, retsenzent; DUBROV, N.F., nauchnyy red.; SYRCHINA, M.M., red. izd-va; KRYZHOVA, M.L., red. izd-va; TURKINA, Ye.D., tekhn. red.

[Metallurgy of ferrous metals; manual for the training of skilled workers in industry] Metallurgiia chernykh metallov; uchebnoe posobie dlia podgotovki kvalifitsirovannykh rabochikh na proizvodstve. Sverdlovsk, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 437 p. (MIRA 14:11)
(Iron—Metallurgy) (Steel—Metallurgy) (Metalwork)

S/276/63/000/002/047/052
A052/A126

AUTHORS: Gol'dshteyn, M.I., and Guterman, S.G.

TITLE: Effect od small vanadium additions on strengthening structural carbon steels

PERIODICAL: Referativnyy zhurnal, Tekhnologiya mashinostroyeniya, no. 2, 1963, 10, abstract 2G53 (Tr. Ural'skogo n.-i. in-ta chern. metallov, no. 1, 1961, 128-144)

TEXT: Small vanadium additions (up to 0.1%) have a considerable effect on the mechanical properties of hardened and high-tempered carbon steel. Hardness, strength and yield limit increase and ductility and toughness decrease. The maximum effect on mechanical properties has an addition of just 0.01-0.04% V whereby after tempering at 600°C, the strength and yield limit increase by 10-15 kg/mm^2 each. To have the same strength, ductility and toughness as carbon steel, steel with a low vanadium content must be tempered at higher temperature, owing to which it will have lower internal stresses than carbon steel. This fact is an advantage of a steel containing small amounts of vanadium. It is established that the presence of

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Effect of small vanadium additions...

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A052/A126

a small amount of vanadium in carbon steel brings about the phenomenon of its age hardening after hardening and high tempering. The strengthening observed thereby is conditioned by precipitation of fine-dispersed vanadium carbides and by breaking up mosaic blocks.

(Abstracter's note: Complete translation.)

Card 2/2

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S/126/61/011/006/005/011
E073/E435

AUTHORS Dubrov, N.F., Gol'dshteyn, M.I. and Guterman, S.G.

TITLE Influence of manganese on the phase composition of electrical silicon steels

PERIODICAL Fizika metallov i metallovedeniye, 1961, Vol.11, No.6, pp.919-922

TEXT The phase composition of silicon steels can be influenced considerably by admixtures and the authors studied the influence of small contents of Mn (0.05 - 0.7%) on the phase composition of electrical steels containing 2 - 3% silicon. This was done because Mn is always present in steel and it extends the range of existence of austenite. The chemical compositions of the experimental melts (in %) are given in the table. The melts were produced in a high frequency magnesite lined induction furnace. The charge consisted of sponge iron, 75% Ferro-silicon, electrode bit and metallic manganese. The manganese content in the melt was increased successively each time after teeming a certain quantity of the melt by adding metallic manganese. From the steel of each composition plates of 15 x 200 x 400 mm were cast into earth moulds.

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21479

Influence of manganese ...

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E073/E435

From these specimens 2 x 15 x 15 mm were cut. The phase composition at elevated temperatures was determined metallographically by investigating the microstructures of specimens quenched from 950-1250 °C. In regions where austenite existed originally, decomposition products were detected after quenching and from the quantity of these it was possible to estimate the quantity of the austenite. The specimens were heated in sealed quartz tubes to prevent decarburization. For quenching, the quartz tubes were broken and the specimens were dropped into a 10% aqueous solution of common salt, thus preventing almost entirely decarburization. The quantitative determination of the phase composition was by the point method of A.A.Glagolev (Ref.1), measuring the quantity of the decomposition products of the sections which originally consisted of austenite, using an eye-piece reference. The count was on not less than 600 points for each specimen. The results on the influence of the manganese content on the quantity of austenite (%) in the temperature range 950-1250 °C are plotted in Fig.1 (a - 0.03% C, 2.14% Si; б - 0.14% C, 2.13% Si; в - 0.09% C, 3.05% Si). Steel containing 0.03% C and 2.14% Si (Fig.1a) showed

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a clearly pronounced influence of the manganese on the formation of austenite at all the temperatures investigated. The maximum quantity of austenite was observed at 1150 °C and even small quantities of manganese bring about an appreciable increase in the austenite content. The observed relations are illustrated by means of microstructural photographs which are included in the paper. An increase in the C content to 0.11% for the same Si content brought about an increase in the quantity of the austenitic phase (Fig 1[illegible]). The structure was completely austenitic for the quenching temperatures 1150 and 1250 °C and almost completely austenitic for steel quenched from 1050 °C. Only at 950 °C was a two phase structure observed and even for that temperature the Mn showed an appreciable influence on the quantity of the austenitic phase. Steel with 0.02% C and 3.16% Si showed a ferritic structure in all cases and even an increase in the Mn content to 0.77% resulted in hardly any appearance of austenite. An increase in the C content to 0.07% with a Si content of 3.05%, led to the appearance of a considerable quantity of the austenitic phase (Fig 1[illegible]). The largest quantity of austenite in

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22479

Influence of manganese

S/126/61/011/006/005/011
E073/E435

the steel was observed for 1150 C for all Mn contents i.e. the curves show a maximum for the same temperature as the curves for steel with 2.14% Si. However the quantity of the austenitic phase in steel with 3.05% Si was lower in all cases than in the steel with 2.14% Si. The influence of Mn on the quantity of austenite in steel with 3.05% Si was clearly pronounced and could be observed even at Mn additions of 0.05 to 0.18%. Thus, the Mn content of electrical steels containing 2 to 3% Si has a considerable influence on the phase composition at high working temperatures the quantity of austenite increases and the quantity of ferrite decreases with increasing Mn content. E.A.Gorlach and E.M.Lazarev participated in the experimental part of the work. There are 2 figures, 1 table and 3 references 1 Soviet-bloc and 2 non-Soviet-bloc. The reference to the English language publication reads as follows R.L.Rickett, Metals Technology, 1946, Vol.11, No.2.

[Abstractor's Note: Condensed translation]

Card 4/8

24479

Influence of manganese ...

S/126/61/011/006/005/011
E073/E435

ASSOCIATION: Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov (Ural Iron and Steel Scientific Research Institute)

SUBMITTED: October 18, 1960

Card 5/8

18 1150 26555 S/12[illegible]/61/012/002/004/019
E0[illegible]/E335

AUTHORS: Gol'dshteyn, M.I., Guterman [illegible] and
Susloparov, G.D.

TITLE: Electron-microscopic and Electron diffraction
Studies of Vanadium Steel Tempered at High
Temperatures

PERIODICAL: Fizika metallov i metallovedeniya 1961, Vol. 12,
No. 2, pp. 193 - 19[illegible]

TEXT: High disperse rejections of [illegible] carbide were detected by X-ray-structural and electron-d[illegible] methods in steels with vanadium contents of 0.7% or [illegible] were quenched and high-temperature tempered. Th[illegible] shown in earlier work that introduction into ca[illegible] vanadium even to the extent of hundredths of per[illegible] about after quenching and high-temperature tempering a[illegible] increase in the strength properties. It was there[illegible] that this phenomenon was due to the rejection of fine[illegible] vanadium carbides. The work described here was aimed [illegible] directly the highly-disperse vanadium-carbide pa[illegible] quenching and

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Electron-microscopic and .... [illegible]/002/004/019
[illegible]

high-temperature tempering, i.e. to prove by a direct method the possibility of dispersion-hardening as a result of small vanadium additions. Steels of a single heat were used (C 0.37%, Si 0.23%, Mn 0.92% P 0.0[illegible] and S 0.043%) without vanadium and with vanadium content of 0.09, 0.25, 1.7 and 2.46%. The specimens were quenched from various temperatures and tempered at 600 and 650 °C for [illegible] hours. Table 1 shows the applied tempering temperature for steels with the various vanadium contents. Specimens without vanadium and with 2.46% V were used for comparison since after the applied heat-treatment, the carbon was primarily in the form of cementite in the first case and in the form of vanadium carbide in the second case. In vanadium-free specimens tempered at 650 °C large rejections of cementite of granular shape were detected. Fine rejections of carbide particles were detected in the specimens containing 0.09% V, in addition to cementite. The quantity of disperse carbide particles increased with increasing vanadium content and they covered almost entirely the surface

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S/126/61/012/002/004/019
E073/E335

of the replica of the specimen containing 2.46% V. The particle dimensions were smaller still in the specimens tempered at 600 °C. Electron-diffraction analysis revealed that the disperse particles were vanadium carbide in the steels with high and low vanadium contents. Electron microphotographs showed that distribution of the vanadium carbides has the following features: intragranular network; distribution along the grain boundaries of considerably larger carbide formations than in the body of the grains, chain-like distribution along the boundaries of the original martensite acicules of carbides which are somewhat larger in size. These features can be explained by the particular state of the boundary regions of the metal. It is known that in the boundary volumes of ordinary grains or on the boundaries of blocks, the regular crystal structure is disturbed and these areas have an increased free energy. As a result of this the activation energy of the diffusion processes decreases and the diffusion coefficient increases. Therefore, it can be assumed that the network nature of the distribution in vanadium carbides inside the grains is

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explained by their preferential separation along the boundaries of blocks. This assumption is confirmed by the fact that the dimensions of the section of the metal bounded by vanadium carbides is of the order of $10^{-5} - 10^{-6}$ cm, corresponding to the size of the blocks. the formation of coarse carbides along the boundaries of the original austenite grains can also be explained by the accelerated movement of the atoms to the growing carbide. Detection of vanadium carbide in steel with a low V content (0.09%) is a direct proof that an increase in the strength due to small V additions is caused by the rejection of highly-dispersed vanadium-carbide particles.
There are 4 figures, 2 tables and 6 references: 2 Soviet and 4 non-Soviet. The two English-language references quoted re: Ref. 2 - E. Smith, I. Natting - Iron and Steel, 1958, 1, No. 6, 226; Ref. 3 - A. Seal, R. Honeycomb - Iron and teel, 1958, 31, No. 6, 256.

Electron-microscopic 26555 S/126/61/012/002/004/019
E073/E535

ASSOCIATION: Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov (Ural Ferrous Scientific Research Institute)

SUBMITTED: December 15, 1960

Table 1:

Content of vanadium, %	-	0.09	0.25	1.7	2.46
Tempering temperature, °C	950	950	1050	1250	1300

X

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GOL'DSHTEYN, M., yurist

Plant fund and its disbursement. Sov. profsoiuzy 17 no.23:35
D '61.
(MIRA 14:12)

(Industrial management) (Bonus system)

DUBROV, N.F., kand.tekhn.nauk; GOL'DSHTEYN, M.I., kand.tekhn.nauk; GUTERMAN, S.G., kand.tekhn.nauk

Effect of phase constitution of electrical steels on the formation of "ragged edges." Stal' 21 no.10:934-938 O '61. (MIRA 14:10)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov.
(Steel--Metallography)
(Phase rule and equilibrium)

MIRONOV, L.V.; DUBROV, N.F.; GUTERMAN, S.G.; GOL'DSHTEYN, M.I.; SMIRNOV, N.S., red.; CHAPAYKINA, F.K., red. izd-va; KOROL', V.P., tekhn. red.

[Phase transformations and properties of electrical steel]Fazovye prevrashcheniia i svoistva elektrotekhnicheskikh stalei. Sverdlovsk, Metallurgizdat, 1962. 34 p. (MIRA 15:12)
(Steel alloys--Magnetic properties)
(Phase rule and equilibrium)

KHOREV, V.N.; BARANOVA, N.A.; GORLACH, I.A.; KVASOV, Ye.I.; KRAMARENKO, I.S.;
MIRONOV, L.V.; PRIVALOV, S.S.; LYASKO, M.V.; DUBROV, N.F.;
MIRONOV, L.V.; KOKSHAROVA, I.K.; MIKHALEV, M.S.; LAZAREV, E.M.;
KUZNETSOVA, I.R.; LAPKIN, N.I.; KRASIL'NIKOV, N.A.; GOL'DSHTEYN, M.I.;
GUTERMAN, S.G.; ODINOKOV, Yu.I.; SKRYABIN, N.P.; KORSHCHIKOV, V.D.

Research by the Ural Ferrous Metal Research Institute. Stal'
22 no.7:621,623,638-639,670 Jl '62. (MIRA 15:7)
(Metallurgical research)

S/133/62/000/007/014/014
A054/A127

AUTHORS: Gol'dshteyn, M.I.; Guterman, S.G.

TITLE: At the Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov (Ural Scientific Research Institute of Ferrous Metals)

PERIODICAL: Stal', no. 7, 1962, 639

TEXT: Two new grades of structural vanadium steel not containing nickel have been developed with the following composition:

	C	Mn	Si	Cr	Mo	V	P	S
35[illegible] (35KhGF)	0.32-0.38	0.95-1.25	0.17-0.37	1.0-1.3	-	0.06-0.12	0.035	0.035
30[illegible] (30Kh3MF)	0.27-0.33	0.30-0.60	0.17-0.37	2.3-2.7	0.2-0.3	0.06-0.12	0.035	0.035

The new grades were tested on an industrial scale in the metallurgicheskiy kombinat im. A.K. Serova (Metallurgical Combine im. A.K. Serov). For specimens of heat-treated billets oil-hardened at 870°C and annealed in water or oil at 630 - 650° and 620°C respectively, the following values were obtained:

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At the Ural'skiy....

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	σ_b kg/mm²	σ_s kg/mm²	δ %	[illegible]	a_k kgm/cm²
35KhGF	93	80	14	5[illegible]	8
30KhZMF	100	85	12	55	10

The new grades can be substituted for the [illegible] (KhN) and 40 [illegible] (40KhNMA) steel grades. Using these grades instead of nickel steels saves nickel (12-15 kg/ton of steel) and cuts production costs by 10-15 rubles/ton.

Card 2/2

BUTAKOV, Dmitriy Konstantinovich; SAZONOV, B.G., kand. tekhn. nauk, retsenzent; GOL'DSHTEYN, M. I., kand. tekhn.nauk, red.; DUGINA, N.A., tekhn. red.

[Technological principles of improving the quality of alloyed steel for castings] Tekhnologicheskie osnovy povysheniia kachestva legirovannoi stali dlia otlivok. Moskva, Mashgiz, 1963. 191 p. (MIRA 16:5)

(Founding--Quality control)
(Steel alloys--Metallurgy)

ROLL, Ya.V., doktor biologicheskikh nauk; FRENKEL', G.M.; GOL'DSHTEYN, M.V.;
CHERNOVA, Ye.V.

Sanitary and biological studies of the Belaya River in the vicinity of Ufa, 1941-1942 [with summary in English]. Trudy Inst. hidrobiol. AN URSR no.21:5-65 '47. (MLRA 8:5)

1. Chlen-korrespondenty Akademii nauk USSR.
(Belaya River--Water--Pollution)

GOL'DSHTEYN, M. V.

PA 59/49T87

USSR/Medicine - Vitamin C
Medicine - Plants

Mar 49

"Vitamin C in the Plant Life of Bashkir ASSR (Ufa Rayon)," B. S. Gologorskiy, YE. N. Klobukova-Alisova, M. V. Gol'dshteyn, Ufa Inst of Epidemiol and Microbiol imeni Mechnikov, Bashkir Bot Gardens, 4 pp

"Gig i San No 3

Reports on research conducted in 1944-1945 on 392 varieties of plants. Tests were made on edible parts and on those used in pharmacology. Vitamin C content was determined by iodine test. Tables show test results. Flora of Bashkir ASSR is considered to have large reserve of Vitamin C (highest content in Rosa canina and cinnamon). Another rich source of Vitamin C is berries, especially black currants. Research data also confirmed the influence of geographical factors on Vitamin C content in plants.

PA 59/49T87

GOL'DSHTEYN, M.Ya.; RABINOVICH, M.L.

Using sintered cast iron chips in the cupola furnace. Lit.proizv. no.5:27 Ag '54. (MLRA 7:8)
(Iron founding)

RASPOPOV, V.I., konstruktor; SUKACH, A.D., konstruktor; D'YACHENKO, K.I., konstruktor; LITVINOV, G.A., konstruktor; GOL'DSHTEYN, M.Ya., konstruktor; MOGILEVSKIY, L.G., konstruktor; ZAYTSEV, G.I., konstruktor; BURLYGA, F.I., red.; SAMOLETOVA, A.V., tekhn. red.

[New equipment unit on pitching seams] Novyi kompleks na krutopadaiushchikh plastakh. Stalino, Knizhnoe izd-vo Stalino-Donbas, 1961. 56 p. (MIRA 16:6)
(Coal mining machinery)

RUCHKO, B.F., inzh.; GOL'DSHTEYN, M.Ya., inzh.; ZHIZLOV, N.I., kand. tekhn. nauk.; ALEKSEYEV, A.D., inzh.

Using powered supports in a steeply pitching seam with a diagonal stope. Ugol' Ukr. 9 no.12:9-13 D '65.

(MIRA 19:1)

1. Dongiprouglemash (for Ruchko, Gol'dshteyn). 2. Donetskiy politekhnicheskiy institut (for Zhizlov, Alekseyev).

Gol'dshteyn, M.Ye.

USSR.

143/116(NA) 621.357.7 :621.82 :669.268.7

Chrome-plating of Large Size Shafts

Stanki i Instrum. 4,
(5),33-34
May,1954
U.S.S.R.

M.E. Gol'dshteyn

A spray chrome-plating method is described, which requires no complex equipment or large-size baths and the electrode stream is fed through a special rake to the plated item (shaft). A d.c. generator supplies a positive pole to the rake and a negative one to the treated object. The thickness of a chromium layer applied by the new spray method is 30-34 mk/hr.

GOLDSHTEYN, M. Ye.

Thickness control of corrosion-inhibiting zinc plating. Zav. lab. 21 no.2:204 '55. (MLRA 8:6)
(Zinc plating)

GOL'DSHTEYN, M. Ye

12512 Chromium Plating of Cutting Tools. M. E. Gol'dshtein and V. M. Fridenson. *Henry Brutcher Translation No.* 3720, 7 p. (From *Stanki i Instrument,* v. 26, no. 7, 1955, p. 26-28.) Henry Brutcher, Altadena, Calif.

Complete procedure for the controlled Cr plating of various tools to a thickness of 2 to 3μ.

SOV/137-57-6-10548

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 6, p 163 (USSR)

AUTHORS: Gol'dshteyn, M.Ye., Freydenzon, V.M.

TITLE: Chrome Plating a Cutting Tool (Khromirovaniye rezhushchego instrumenta)

PERIODICAL: Tekhnol. transp. mashinostroyeniya, 1956, Nr 5, pp 27-31

ABSTRACT: Description of the technique of metered chrome plating of taps, cutting dies, gear-wheel cutters, and worm-gear milling cutters. For gear-wheel cutters and worm-gear milling cutters anode-cathode devices are used in which the anodes are of steel or of lead-coated steel. Brief notes on the use of a chrome-plated tool are given.

Ye.G.

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GOL'DSHTEYN, M.YE.

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✓ Low-temperature chromium-plating of large dies. M. E. Gol'dshtein. Stanki i Instrument 28, No. 6, 34-5(1957). —Plating solns. contg. 250 g. CrO_3/l. and 3-8 g. NH_4F/l. permit plating at 15-25°, depositing Cr with a hardness of 67-70 R_c, i.e., the same as produced with conventional H_2SO_4-catalyzed solns. The permissible c.d. increases with increase in NH_4F concn. With 4% NH_4F the optimum current efficiency of 83% is obtained at 10-15 amp./sq. dm. The electrolyte has a better throwing power than the conventional ones.

J. D. Gat

GOL'DSHTEYN, M. [illegible]

Hard Wear-Resistant Nickel Plating

Povysheniye iznosostoykosti i sroka sluzhby mashin. t. 2 (Increasing the Wear Resistance and Extending the Service Life of Machines. v. 2) Kiyev, Izd-vo AN UkrSSR, 1960 190 p. 3,000 copies printed. (Series: Its: Trudy, t. 2)

Sponsoring Agency: Vsesoyuznoye nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti. Tsentral'noye i Kiyevskoye oblastnoye pravleniya. Institut mekhaniki AN UkrSSR.

Editorial Board: Resp. Ed.: [illegible] Grozin; Deputy Resp. Ed.: [illegible]; [illegible] Braun, I. D. Faynerman, I. V. Kragel'skiy; Scientific Secretary: [illegible] Karabash; Ed. of v. 2: Ya. A. Samokhvalov; Tech. Ed.: N. P. Rakhlina.

COVERAGE: The collection contains papers presented at the Third Scientific Technical Conference held in Kiyev in September 19[illegible] on problems of increasing the wear resistance and extending the service life of machines. The conference was sponsored by the Academy of Sciences Ukrainian SSR), and by the Kiyevskaya oblastnaya organizatsiya nauchno-tekhnicheskogo obshchestva mashinostroitel'noy promyshlennosti (Kiyev Regional Organization of the Scientific Technical Society of the Machine-Building Industry).

GOL'DSHTEYN, Mark Yefimovich; SHOBIK, L.Ye., inzh., ved. red.;
SHREYDER, A.V., kand. tekhn. nauk, red.; SMIRNOV, B.M.,
tekhn. red.

[Electrodeposition of nickel-phosphorus alloys]Elektroliticheskoe osazhdenie splava nikel - fosfor. Moskva, Filial Vses. in-ta nauchn. i tekhn. informatsii, 1958. 15 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 13. No.M-58-132/14) (MIRA 16:3)
(Nickel-phosphorus alloys) (Electroplating)